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Corneal Tear Repair In Young Child.

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ABSTRACT

Approximately 3% of all visits to the emergency department are due to eye trauma, with the vast majority of these presentations involving corneal injury. Injuries to the cornea can broadly be categorized into traumatic and exposure-related. More severe corneal injuries include penetrating trauma with or without the involvement of the anterior and posterior segment structures. This case report describes potentially serious incident involving a 16 years-old male presented with injury to his left eye with vegetative matter (tree bark) while working in farm. Vegetative matter leads to full thickness corneal tear with iris incarceration in left eye which was associated with corneal edema. After all routine investigations patient was taken in emergency OT and under all aseptic precautions, left eye corneal tear repair with iris abscission done under local anaesthesia. This case highlighting the potential danger to vision and overall health.

Keywords: vegetative matter (tree bark), Corneal tear, iris incarceration.

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INTRODUCTION

Trauma is the second major cause of corneal blindness and has been reported to be one of the most important causes of unilateral vision loss in developing countries. Males are five times more likely to be affected than females. These injuries are also more common in the younger age groups—nearly half of patients are under 40 years of age. We reported an interesting case of Vegetative matter (tree bark) injury to left eye that led to full thickness corneal tear with iris incarceration which was associated with corneal edema [1-6].

CASE HISTORY

A 16-year-old male reported to us with chief c/o diminuation of vision a/w pain, redness, watering in left eye followed by vegetative matter trauma (tree bark) while working in farm. His respiratory rate, blood pressure, and pulse rate were within normal limits. On the initial examination, left eye vision was 6/60, conjunctival congestion present, corneal full thickness tear of size 3*3 mm with iris incarceration at 5-6 O'clock upto limbus. Left eye anterior chamber was shallow, pupil peaked at 5 O'clock and sluggishly reacting to light. (Figure-2a and 2b).

Patient was admitted to ophthalmology ward and all routine investigations done.

Investigations: CBC, LFT, RFT, RBSL, BT, CT, Serum electrolytes, HIV, HBsAG, ECG, Chest X-Ray, X-ray skull and orbit, USG B-Scan etc.

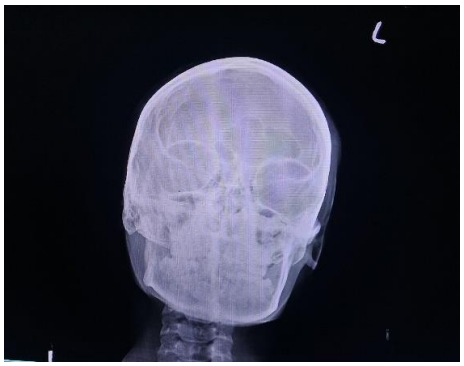

Figure1- X-ray skull and orbit

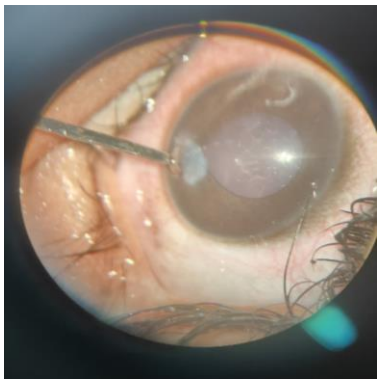

Figure-2(a)

Figure-2(b)

Figure-2(a) and 2(b)-Preoperative photographs

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Right eye anterior segment and fundus findings within normal limits.

Left eye corneal tear repair with Iris abscission was done under local anesthesia and two corneal sutures were taken using 10-0 ethilon suture and anterior chamber formed with air bubble (Figure3)

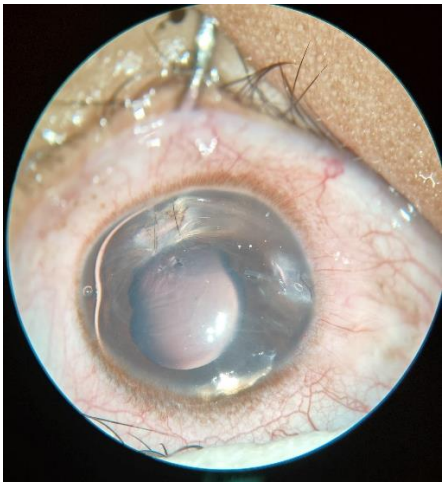

Figure 3: Postoperative photograph

Treatment given includes Inj. Augmentin 1.2 gm iv bd, Inj. Gentamycin 80 mg iv bd, Inj. Metronidazole 100 cc iv TDS, Inj. Dexamethasone 8 mg iv OD, Inj. Pantaprazole 40 mg iv BD, e/d Moxifloxacin 6 times/d, e/d Cipro-D 6 times/d, e/d flurbiprofen bd, e/d Atropine bd, e/d Carboxymethylcellulose 8 times/d, e/o Lacrigel TDS, Tab. Vitamin-c 500 mg BD, Tab. Paracetamol 500 mg BD.

Postoperative findings of LE:

	Postoperative Day 1	Postoperative Day 7	Postoperative Day 14	Postoperative Day 28
	Left eye	Left eye	Left eye	Left eye
Vision	6/60	6/36	6/18	6/6
Extra ocular movements	Full and free in all directions of gaze	Full and free in all directions of gaze	Full and free in all directions of gaze	Full and free in all directions of gaze
Ocular adnexa	Within normal limit	Within normal limit	Within normal limit	Within normal limit
Conjunctiva	Conjunctival congestion present	Conjunctival congestion present	Mild conjunctival congestion present	No conjunctival congestion
Cornea	2 sutures present at 5'O clock,well burried and edema present	2 sutures insitu at 5'O clock, well buried and edema reduced	2 sutures insitu at 5'O clock, well buried and edema reduced	2 sutures insitu at 5'O clock, well buried and cornea clear
Anterior chamber	AC formed,air bubble present	AC formed	Normal depth	Normal depth
Iris	Abscission present at 5'O clock	Abscission present at 5'O clock	Abscission present at 5'O clock	Abscission present at 5'O clock
Pupil	Under therapeutic mydriasis	Irregular	Irregular	Irregular
Pupillary aperture	Clear	Clear	Clear	Clear
Intra ocular pressure	15 mm hg	12mm hg	12 mm hg	11 mm hg

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Fundus examination	Media clear Optic disc-colour/ size/shape normal Margin distinct CDR0.0.3 Blood vessels – normal A: V ration 2:3 Fr-present	Fundus examination Media clear Optic disc-colour/ size/shape normal Margin distinct CDR0.3 Blood vessels – normal A: V ration 2:3 Fr-present	Media clear Optic disc-colour/ size/shape normal Margin distinct CDR0.0.3 Blood vessels – normal A: V ration 2:3 Fr-present	Media clear Optic disc-colour/ size/shape normal Margin distinct CDR0.0.3 Blood vessels – normal A: V ration 2:3 Fr-present

Postoperative day 1 photograph

Postoperative day 14 photograph

Postoperative day 28 photograph

DISCUSSION

Corneal laceration and perforation can be accidental, however more often involve activities that cause high-speed projectiles such as saws, angle grinders, and pounding metal objects, with or without eye protection. It is important to elicit from the history the type of object i.e. wood or metal and estimated projectile speed.

In most population-based studies, there is a strong tendency for open globe injuries to involve males. This may be due to the fact that males are more prone to workplace-related, home improvement-related, and violence-related injuries as compared to women [7]. In this case report male is affected.

Neeta et al [8] found highest incidence of penetrating ocular injuries was in the age group of 6–10 years (48%). Dasgupta et al [9] found the incidence of penetrating ocular injuries to be 45.45% in the age group of 6–10 years. Rapoport et al [10] found almost half of the penetrating ocular injuries sustained by children of 6–12 years. In this case report patient was16 years old.

Arnold Sorsby [11] stated that approximately 66% of penetrating wounds of eye are through cornea and 24% are corneoscleral. Bigar [12] reported that in 53% patients' injury was limited to cornea and 18% were corneoscleral. Uveal tissue prolapsed was seen in 66.6% of these patients indicating more severe grade of injury with high chances of infection. In this case report patient has full thickness corneal injury with iris incarceration.

Common causes of penetrating eye injuries were wooden stick (34%), wooden arrow (30%), metal wire (10%), and thorn (18%) [8]. In this case report vegetative matter (tree bark) injury noted.

Visual outcome was better in patients in which only anterior segment was involved as against extensive trauma involving both anterior as well as posterior segment. lens was affected in 52% of the total patients with the commonest affection being traumatic cataract[8]. In this case report patient had no posterior segment involvement and traumatic cataract.

Several studies showed that the factors to correlate with visual outcome were type, location, extent of injury, initial visual acuity, afferent pupillary defect, lenticular involvement, vitreous hemorrhage, and intraocular foreign body.[13] The time lag between injury and surgery also adversely affects the final vision outcome though not statistically significant. An increase in the time lag of one day from injury to surgery results in 1.001 times more likelihood of poor final visual acuity. Issac et al [14] demonstrated a 1.16-fold increased chance of worse visual prognosis with each day of delay of surgery. In this case report patient presented within 24 hrs with final visual outcome is 6/6 which represents good prognosis.

CONCLUSION

Ocular injuries comprise a group of disorders with a wide variation in clinical presentation, causes, and visual outcome. The three most important factors determining the final visual outcome were size of injury, site of injury and time interval between the injury and the presentation. preoperative visual acuity (VA), mode of injury, and size of wound affect the final visual outcome after surgical repair of corneal laceration. While the time lag between injury and surgery may negatively impact final visual outcome.

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